REMARKS

Claims 21 and 25 have been amended. No new matter has been introduced by the amendments. Claims 21, 22, 24, 25, 26, 28, and 29 are currently pending.

Claims 21, 24, 25, and 28 stand rejected under 35 U.S.C. §102(b) as being anticipated by Zahorik et al., U.S. Patent No. 5,789,277 (Zahorik). Applicants respectfully traverse the rejection.

Independent claim 21 relates to a memory cell intermediate structure. As such, claim 21 recites "a memory cell intermediate structure comprising: a first conductor formed on said substrate; an insulator formed on said first conductor, at least one via formed within said insulator and extending to said first conductor; [and] a metallic material formed in said at least one via." Claim 21 further recites "a flowable oxide material localized within said at least one via and over said metallic material within said via such that a top surface of said flowable oxide material is below a top surface of said insulator."

Amended independent claim 25 recites "a programmable conductor random access memory intermediate structure, comprising: a metallic material formed on a surface of an insulating layer and within and over a bottom of a via in said insulating layer; and a flowable oxide material localized within said via and over said metallic material within said via such that a top surface of said flowable oxide material is below a top surface of said insulating layer."

Zahorik fails to teach or suggest each and every limitation of independent claims 21 and 25. Specifically, Zahorik fails to teach or suggest "a flowable oxide material localized within said at least one via and over said metallic material within said via such that a top surface of said flowable oxide material is below a top surface of said insulator," as recited by claims 21. Similarly, Zahorik fails to teach or suggest "a flowable oxide material localized within said via and over said metallic material within said via such that a top surface of said flowable oxide material is below a top surface of said insulating layer," as recited by claim 25.

Zahorik discloses a chalcogenide memory cell having a lower conductive layer 120 of carbon, a layer 130 of chalcogenide material, and an upper conductive layer 140 of carbon.

See col. 8, lines 25-30 of Zahorik; *see also* Fig. 7 of Zahorik. Zahorik also discloses a protective layer 150 of silicon dioxide over layers 120, 130, and 140. *See* col. 8, line 66 through col. 9, line 1 of Zahorik; *see also* Fig. 7 of Zahorik. Protective layer 150 is provided over the insulating layer 80 as well. According to Zahorik, layer 150 protects layers 120, 130, and 140 within the pore 110 from attack by the chemical etchants used in subsequent operations. *See* col. 9, lines 5-7 of Zahorik.

FIG. 11 of Zahorik (reproduced below) illustrates layer 150 over layer 140, which is formed over the surface of the insulator. *See also*, col. 9, lines 15-19 of Zahorik. As illustrated, however, Zahorik's layer 150 does not have a top surface of the flowable oxide material that is below a top surface of an insulator or insulating layer.

Accordingly, Zahorik fails to disclose, teach or suggest "a flowable oxide material localized within said at least one via and over said metallic material within said via such that a top surface of said flowable oxide material is below a top surface of said insulator," as recited by claims 21. As discussed above, Zahorik fails to disclose, teach or suggest "a flowable oxide material localized within said via and over said metallic material within said via such that a top surface of said flowable oxide material is below a top surface of said insulating layer," as recited by claim 25.

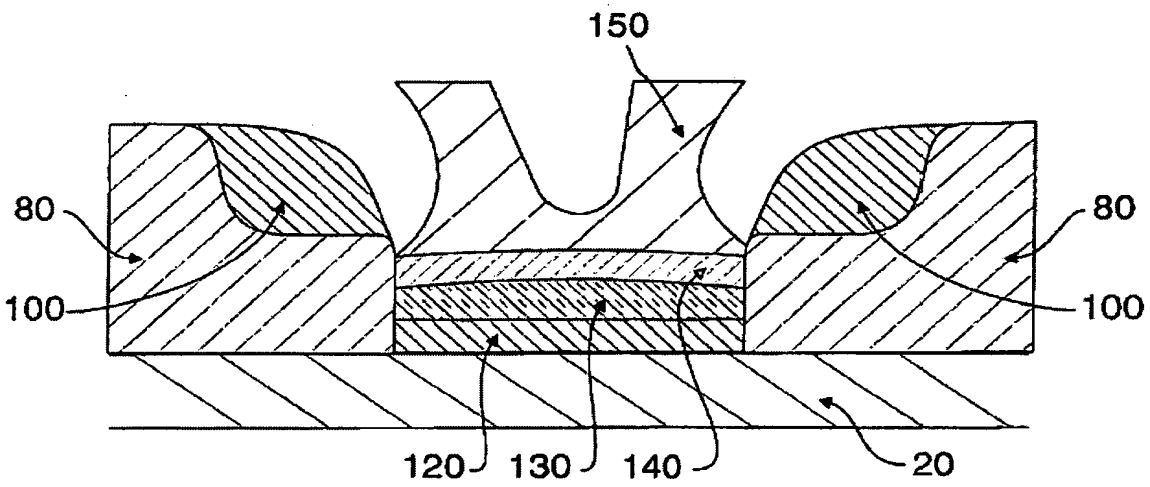
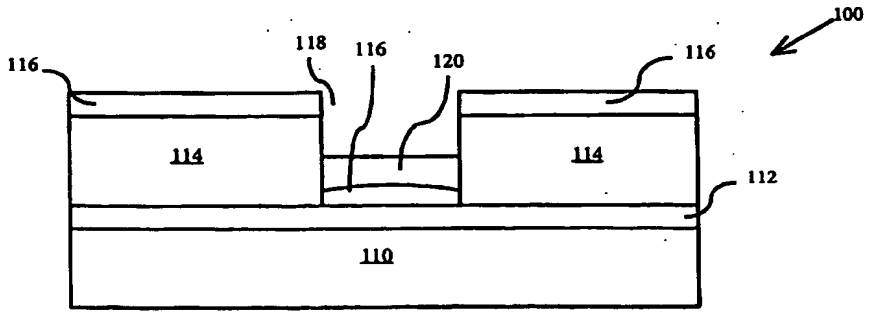


FIG. 11

One of the advantages of the present invention is that the flowable oxide material is flowable such that the flowable oxide material can be "localized within said via and over said metallic material within said via." *See* FIG. 2B of the present invention (reproduced below). The present invention, therefore, eliminates the step of removing the oxide layer to expose the metallic material on the surface of the insulator by the use of flowable oxide, while allowing further processing of the sidewall regions of the via, something Zahorik (alone or in combination with Kozicki and Iba) cannot do. *See infra.*

FIG. 2B



For at least the foregoing reasons, Applicants respectfully submit that claim 21 and 25 are allowable over Zahorik.

Claims 24 and 28 depend from claims 21 and 25, and are allowable for at least the same reasons set forth above and on their own merits.

Claims 22, 26, and 29 are rejected under 35 U.S.C. §103(a) as being unpatentable over Zahorik as applied to claims 21, 24, 25, and 29 above, and further in view of Kozicki, U.S. Patent 6,487,106 and Iba, U.S. Patent No. 5,883,006. Applicants respectfully traverse the rejection.

As discussed above with respect to claims 21 and 25, Zahorik fails to teach or suggest each and every limitation recited by claims 21 and 25. Therefore, Zahorik, Kozicki, and Iba, alone or in combination, fail to teach or suggest each and every limitation of claims 21 and

25. For at least the foregoing reasons, claims 21 and 25 (and their dependent claims 22, 26, and 29) are allowable over Zahorik, Kozicki, and Iba.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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Respectfully submitted,

By _____

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